REMARKS

The Office Action mailed on August 21, 2002, has been received and reviewed.

Claims 17-33, 50-72, and 74-101 are currently pending in the above-referenced application. Each of claims 17-33, 50-72, and 74-101 stands rejected.

Reconsideration of the above-referenced application is requested.

Drawings

Objection Under 37 C.F.R. § 1.121(a)(6)

The Drawings have been objected to under 37 C.F.R. § 1.121(a)(6) for introducing new matter into the above-referenced application. In particular, it has been asserted that the originally filed specification does not support the illustration of regions of a first conductive material which are laterally spaced apart and discrete from one another.

Page 9, line 27, to page 10, line 1 of the originally filed specification describes regions 14a and 14b that are laterally spaced apart from one another, and which may be laterally discrete from one another. Notably, regions 14a and 14b are depicted in originally filed FIGs. 6-8. When taken in view of the statement that "*[a]ny previously unpatterned portions* of layers 14 and 12 *may* also *be patterned,* ***as necessary,*** to further define gate 20 and fuse 22 . . ." (emphasis supplied), which appears at page 11, lines 9-11, of the originally filed specification, it is clear that the originally filed specification provides support for spaced apart regions 14a and 14b that are also laterally discrete from one another.

Accordingly, the 37 C.F.R. § 1.121(a)(6) objection to the drawings should be withdrawn.

Objection Under 37 C.F.R. § 1.83(a)

The drawings have also been objected to under 37 C.F.R. § 1.83(a) for failing to show each and every element recited in the claims. Specifically, it has been asserted that the "laterally discrete spaced apart regions" of a first conductive layer have been omitted from the drawings. Such an element is clearly depicted in each of FIGs. 6-8, in which the laterally discrete spaced

apart regions are identified by reference characters 14a and 14b. Moreover, FIG. 4A, which was provided merely to clarify subject matter which was already described in the originally filed specification, provides another view of the subject matter shown in FIG. 4, in which the portions of the first conductive layer that remaining following patterning thereof are laterally discrete and spaced apart from one another.

Therefore, the 37 C.F.R. § 1.83(a) objection to the drawings should be withdrawn.

The threat of abandonment of the application for failure to replace the drawings, which appears on page 2 of the final Office Action, is entirely unfounded and completely inappropriate.

Specification

The specification has been objected to under 37 C.F.R. § 1.75(d)(1) and M.P.E.P. § 608.01(o) for failing to provide proper antecedent basis for the subject matter which is recited in the claims. Again, it has been asserted that the recitation of "laterally discrete spaced apart regions" of a first layer of conductive material lacks support in the originally filed specification.

Looking to page 9, line 27, to page 10, line 1, of the originally filed specification, it is clear that the spaced apart regions 14a and 14b, which are shown in originally filed FIGs. 6-8, may be laterally discrete and spaced apart from one another.

Accordingly, the objections to the specification should be withdrawn.

Rejections Under 35 U.S.C. § 112

Claims 17-33, 50-72, and 74-101 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Again, the spaced apart regions 14a and 14b which are described, for example, at page 9, line 16, to page 10, line 7, of the originally filed specification are shown in originally filed

FIGs. 6-8 as being laterally discrete from one another. Although descriptive text does not itself explain that these regions are laterally discrete from one another, the originally filed drawings, particularly FIGs. 4-8, do not depict regions 14a and 14b as being anything other than laterally discrete from each other. Moreover, page 11, lines 9-11 of the originally filed specification clearly indicate that, following the patterning of a layer 16 which has been formed over spaced apart regions 14a and 14b, it may not be necessary to further pattern the remaining portions of layer 14.

Thus, the originally filed specification clearly indicates that the spaced apart regions 14a and 14b may be laterally discrete from one another. Any other interpretation of the described subject matter could only be conjecture based on a series of assumptions.

Accordingly, the originally filed specification describes the claimed subject matter in such a way as to reasonably convey to one of ordinary skill in the art that, at the time the above-referenced application was file, the inventor was in possession of the claimed invention. Therefore, the 35 U.S.C. § 112, first paragraph rejection of claims 17-33, 50-72, and 74-101 should be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Fischer in View of Chen

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 17, 19-24, and 26-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,185,291 to Fischer et al. (hereinafter "Fischer") in view of U.S. Patent 5,712,206 to Chen (hereinafter "Chen").

Fischer teaches a fuse for use in a semiconductor device structure, as well as a process for fabricating the fuse. The fuse of Fischer, which is disposed over an insulative structure (*i.e.*, dielectric 10) (*see, e.g.*, FIGs. 1-4; col. 2, lines 29-36), includes a first conductive layer 11 and a second conductive layer 12. The first conductive layer 11 of the finished fuse may be formed from aluminum or tungsten (col. 2, lines 43-45) and includes two spaced apart end regions (FIG. 3). The second conductive layer 12 of the fuse may be formed from the same material as the first layer 11 or from polysilicon. Col. 2, lines 59-63. In a finished fuse, such as that illustrated in FIG. 3 of Fischer, end portions of the second conductive layer 12 overlie the spaced apart regions of the first conductive layer 11, while the central portion 111 of the second conductive layer 12 is located in substantially the same plane as the first conductive layer 11 and between the spaced apart portions of the first conductive layer 11. *See also,* col. 2, lines 56-58.

Fischer teaches that the fuse may be fabricated by forming a first layer of conductive material 11 over an insulative structure 10 (FIG. 1; col. 2, lines 45-48), patterning a "window" 111 in the first layer of conductive material to expose a portion of the underlying insulative structure (FIG. 1; col. 2, lines 36-38; col. 3, lines 34-55), forming a second layer 12 of conductive material over the first layer 11 and within the window 111 (FIG. 2; col. 2, lines 49-55), and patterning the "combined" first and second layers to form the fuse (FIG. 3; col. 2, lines 56-58).

By patterning the first conductive layer is this manner, laterally discrete spaced apart regions, such as regions 14a and 14b described in the examples of the above-referenced application, are not formed. Instead, the majority of the patterned layer 11 remains, with small windows 111 being formed therethrough.

Chen likewise teaches a fuse and a method for fabricating the fuse. The fuse of Chen may be formed from aluminum, titanium tungsten, a silicide or polycide, or polysilicon. Col. 5, lines 59-63, but only includes a single material layer.

A portion of the fuse described in Chen is exposed by way of a so-called fuse "window." *See, e.g.,* col. 4, lines 50-54. This "window" facilitates programming of the fuse with a laser. *See* col. 7, lines 38-40. In order to prevent contamination of the fuse prior to programming thereof, as well as to prevent contamination of the underlying semiconductor device features following programming of the fuse, Chen teaches a method for forming a moisture barrier both above and beneath the window of the fuse.

There are several reasons that a *prima facie* case of obviousness has not been established with respect to the subject matter recited in claims 17, 19-24, and 26-33.

One of Ordinary Skill in the Art Would Not Have Been Motivated to Make the Asserted Combination

First, one of ordinary skill in the art would not have been motivated to combine the teachings of Fischer and Chen in the manner that has been asserted in the outstanding Office Action.

Specifically, Fisher does not provide any motivation to one of ordinary skill in the art to form one of the fuse layers taught therein from a metal silicide. Chen does not provide one of ordinary skill in the art with any motivation to use a multi-layer fuse in place of the single-layer fuse taught therein. As neither of these references, nor the knowledge that was generally available in the art prior to the filing date of the above referenced applications, provides any suggestion of the desirability of forming a fuse with multiple layers, one of which comprising a metal silicide, another layer comprising metal or polysilicon, none of Fischer, Chen, or the knowledge that was generally available in the art before the filing date of the above-referenced application would have motivated one of ordinary skill in the art to make the asserted combination.

Moreover, by touting the usefulness of aluminum, tungsten, or polysilicon for use in forming the programmable portion of the fuse described therein, Fischer teaches away from the asserted motivation to use a metal silicide as a programmable portion of a fuse.

Further, Fischer teaches methods for fabricating a fuse which is configured to be blown by an electrical current, while the teachings of Chen are limited to a method for fabricating a fuse which is configured to be blown with a laser beam.

As such motivation is obviously lacking, the rejection of claims 17, 19-24, and 26-33 appears to be based entirely and improperly upon hindsight gleaned from the teachings of the above-referenced application.

The Asserted Combination Does Not Teach or Suggest Each and Every Claim Element

Second, the asserted combination of Fischer and Chen does not teach or suggest each and every element of independent claim 17.

Independent claim 17 of the above-referenced application recites a method for fabricating a fuse. The method of claim 17 includes, among other things, patterning a layer of conductive material to define at least two laterally distinct, spaced apart regions, between and around which an underlying insulative structure is exposed. The method of claim 17 also includes disposing a layer of metal silicide over and between the two regions of conductive material.

In contrast to the subject matter recited in independent claim 17, Fischer and Chen *both* lack any teach or suggestion of patterning a conductive layer to define at least two laterally distinct, spaced apart regions between and around which an underlying insulative structure is exposed. Instead, the teachings of Fischer are limited to forming windows in a lower layer of conductive material, then covering the lower layer of conductive material and filling the windows with another, upper layer of conductive material before defining laterally discrete regions from the lower layer of conductive material. Thus, an insulative structure which underlies the lower layer of conductive material cannot be exposed both around and between the spaced apart regions as the spaced apart regions are formed therein. Chen teaches forming an entire fuse from a single

layer of conductive material, thus, Chen does not teach or suggest forming laterally spaced apart regions of a fuse from a layer of conductive material.

The assertion at page 18 of the final Office Action that the references have been "attack[ed] individually where the rejections are based on combinations of references . . ." is not understood, since substantially the same argument has been maintained throughout prosecution of the above-referenced application–that *both* Fischer and Chen lack any teaching or suggestion of forming laterally discrete, spaced apart regions from a layer of conductive material between and around which an underlying insulative structure is exposed.

As Fischer *and* Chen both fail to provide any teaching or suggestion of this element of independent claim 17, these references cannot together teach or suggest the method which is recited in independent claim 17.

As Fischer and Chen, *taken together,* fail to teach or suggest all of the elements of independent claim 17, they also fail to teach or suggest each and every element of claims 19-24 and 26-33, each of which depends either directly or indirectly from claim 17.

No Reasonable Expectation of Success

Third, one or ordinary skill in the art would have no reason to believe that combining the teachings of Fischer and Chen could result in the method which is recited in independent claim 17, or in any of claims 19-24 or 26-33. This is because one of ordinary skill in the art would readily recognize that since neither Fischer nor Chen teaches or suggests a method which includes "patterning [a] layer of conductive material" in such a way as "to define at least two laterally discrete, spaced apart regions of conductive material" therefrom, "between and around" which an underlying insulative structure is exposed, there is no reason to expect that combining the teachings of Fischer and Chen would result in the method which is recited in independent claim 17.

For these reasons, a *prima facie* case of obviousness of claims 17, 19-24, and 26-33 has not been established pursuant to the requirements of 35 U.S.C. § 103(a). Therefore, claims 17, 19-24, and 26-33 are allowable over the combination of Fischer and Chen. Accordingly, the rejection of claims 17, 19-24, and 26-33 should be withdrawn.

Fischer, Chen, and Mitani

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fischer and Chen as applied to claim 17 above, and further in view of Japanese Patent No. 59-154,038 to Mitani (hereinafter "Mitani").

The teachings of Fischer and Chen have been summarized above.

Mitani teaches a fuse with lower layer that is formed from polycrystalline silicon and an upper layer with spaced apart regions that are formed from a metal silicide, as well as methods for fabricating such a fuse. In the fabrication method, the polycrystalline silicon is first deposited on a field oxide. Next, a layer of metal silicide is formed over the polycrystalline silicon, and the layers are etched in combination. Finally, the intermediate part of the metal silicide is etched, leaving only polycrystalline silicon as the central region of the finished fuse, the portion of the fuse that is to be ruptured.

Claim 18 is allowable, among other reasons, as depending from claim 17, which should be allowed.

Moreover, Mitani does not remedy the deficiencies that have been noted previously herein with respect to the asserted combination of Fischer and Chen.

One of Ordinary Skill in the Art Would Not Have Been Motivated to Make the Asserted Combination

First, one of ordinary skill in the art would not have been motivated to combine the teachings of Mitani with those of Fischer or Chen in the manner that has been asserted in the outstanding office action.

The teachings of Fischer are limited to methods for fabricating a multi-layer fuse, none of the layers of which comprise metal silicide. Nor does Fischer provide one of ordinary skill in the art with any motivation to use metal silicide to form one of the layers of the fuse described therein. Chen teaches a method for forming a single-layer fuse from a variety of materials, including metal silicide, but does not provide one of ordinary skill in the art with any motivation to also use another conductive material at the ends, or terminals, of the fuse. While Mitani includes the combined use of a metal silicide layer with a polysilicon layer, Mitani teaches that the polysilicon, not the metal silicide, is useful for forming the region of the fuse which is to be ruptured.

As such, one or ordinary skill in the art would not have been motivated to combine the teachings of Mitani with those of either Fischer or Chen. This is because Fisher teaches forming and partially patterning a first layer of conductive material, then forming a second layer of conductive material over the first layer, a portion of the second layer forming the region of a fuse which is configured to be blown, and finally patterning both the first and second layers, while Mitani teaches forming a first layer of conductive material, forming a second layer of conductive material over the first layer, then patterning both the first and second layers, with a portion of the first layer which remains forming the region of the resulting fuse which is configured to be blown. Chen does not teach a fuse fabrication method which includes forming and patterning multiple layers of conductive material.

There is also no motivation to combine the teachings of Chen with those of either Fischer or Mitani. This is because Fischer and Mitani teach the use of multiple layers to for a fuse, while Chen merely teaches the use of a single material layer. Moreover, Fischer and Mitani both teach the use of conventional materials to form the portion of a fuse that is configured to be blown, while Chen teaches that metal silicide may be used to form the portion of a fuse which is to be blown. Further, Fischer and Mitani teach methods for fabricating fuses which are configured to be blown by an electrical current, while the teachings of Chen are limited to methods for fabricating fuses that are configured to be blown with laser beams.

For the reasons that have been set forth previously herein, one or ordinary skill in the art would not have been motivated, prior to the filing date of the above-referenced application, to combine the teachings of Fischer with those of Chen.

For these reasons, one of ordinary skill in the art would not be motivated, either by the teachings of Fischer, Chen, and Mitani, or by the knowledge that was available to one or ordinary skill in the art prior to the filing date of the above-referenced application, to combine the teachings of Fischer, Chen, and Mitani in the manner that has been asserted.

Any such motivation could only have been improperly gleaned from the hindsight which the description of the above-referenced application provides.

The Proposed Combination Does Not Teach or Suggest Each and Every Claim Element

Moreover, with respect to the fuse fabrication process described in Mitani, there is no teaching or suggestion of patterning a conductive layer, such as the polysilicon layer thereof, to form at least two laterally discrete, spaced apart regions between and around which regions of an underlying insulative structure are exposed. As this teaching is also lacking in both Fischer and Chen, Fischer, Chen, and Mitani cannot, in combination, teach or suggest these elements.

There Is No Reasonable Expectation that the Proposed Combination Would Be Successful

Second, one of ordinary skill in the art would not have any reason to expect that combining the methods described in Fischer, Chen, and Mitani would result in the method that is recited in claim 18. This is primarily due to directive provided in M.P.E.P. § 2141.02 that, in combining reference teachings, the teachings of the references must be considered in their entireties. Due to the extreme divergence between the methods of Fischer, Chen, and Mitani, there is no way all of the teachings of these references could be considered in developing a fuse fabrication method such as to which claim 18 is limited.

Furthermore, as none of Fischer, Chen, or Mitani teaches or suggests forming laterally discrete, spaced apart regions from a layer of conductive material between and around which an

underlying insulative structure is exposed, as recited in claim 17, from which claim 18 depends, there is no way that one of ordinary skill in the art would have a reasonable expectation that the asserted combination of teachings from Fischer, Chen, and Mitani could result in the method which is recited in claim 18.

The foregoing illustrates a few of the reasons why a *prima facie* case of obviousness has not been established under 35 U.S.C. § 103(a). As a *prima facie* case of obviousness has not been set forth, claim 18 is allowable over the combination of Fischer, Chen, and Mitani. Therefore, the 35 U.S.C. § 103(a) rejection of claim 18 should be withdrawn.

Fischer, Chen, and Sandhu

Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fischer and Chen as applied to claim 17 above, and further in view of U.S. Patent No. 5,231,056 to Sandhu (hereinafter "Sandhu").

The teachings of Fischer and Chen have been summarized above.

Sandhu teaches a process for depositing a tungsten silicide film on a substrate using chemical vapor deposition.

Claim 25 is allowable, among other reasons, as depending from claim 17, which should be allowed. Claim 25 is further allowable since Sandhu does not provide any teaching or suggestion which remedies the deficiencies in the asserted combination of Fischer and Chen, examples of which have been noted previously herein.

Fischer, Mitani and Chen

Claims 50, 51, 55-60, and 62-68 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fischer in view of Mitani and Chen.

The teachings of each of these references have been summarized above. In addition, the reasons that one of ordinary skill in the art would not have been motivated to combine the

teachings of these references in the asserted manner and the reasons that one of ordinary skill in the art would have not reason to expect the asserted combination to be successful have been set forth above.

The Proposed Combination Does Not Teach or Suggest Each and Every Claim Element

Moreover, none of Fischer, Mitani, or Chen teaches or suggests each and every element of claims 50, 51, 55-60, and 62-68. Accordingly, the combination of Fischer, Mitani, and Chen cannot teach or suggest each and every element of any of claims 50, 51, 55-60, or 62-68.

Independent claim 50 recites a method for fabricating a fuse that includes, among other things, fabricating laterally discrete, spaced apart regions comprising polysilicon on an insulative structure and fabricating a fuse comprising a metal silicide. When the laterally discrete, spaced apart regions are fabricated and prior to forming the overlying fuse, an underlying insulative structure is exposed between and around the spaced apart regions. The fuse is fabricated in such a way as to include a central region disposed adjacent the insulative structure and between the spaced apart regions, as well as at least two terminal regions over the spaced apart regions and on opposite ends of the central region.

The teachings of Fischer are limited to forming a window centrally through a conductive layer, which could not result in laterally discrete, spaced apart regions of a first layer of conductive material. When the second conductive layer is formed, the insulative structure is no longer exposed through the window. According to Fischer, the first layer of conductive material is not patterned to form laterally discrete, spaced apart regions until after the second layer of conductive material has been formed and covers any portions of the insulative structure that were previously exposed through the window.

Moreover, in the method taught by Fischer, the insulative structure that underlies the conductive structure is not exposed both between and around the laterally discrete, spaced apart regions while the spaced apart regions are fabricated.

Further, Fischer teaches that polysilicon may be used to form a top layer of the fuse described therein, including the fusible element that extends between terminals of the fuse. There is no teaching or suggestion in Fischer, however, that spaced apart regions may be formed from polysilicon.

Mitani also lacks any teaching or suggestion of a method that includes fabricating spaced apart regions from polysilicon, with an underlying insulative structure being exposed both between and around the spaced apart regions as they are fabricated. Instead, the spaced apart regions of Mitani are formed from a metal silicide and located over a conductive structure. The underlying field oxide structure is never exposed between the metal silicide spaced apart regions of Mitani. Additionally, Mitani neither teaches or nor suggests fabricating a fuse that comprises metal silicide and that includes a central region disposed adjacent an insulative structure and between spaced apart regions that comprise polysilicon.

Chen lacks any teaching or suggestion of fabricating spaced apart regions from any type of conductive material, let alone polysilicon. Nor does Chen teach or suggest that, in fabricating the metal silicide fuse taught therein, a central region of the fuse is disposed between spaced apart regions that comprise polysilicon.

Taken together, it is clear that none of Fischer, Mitani, or Chen teaches or suggest fabricating laterally discrete, spaced apart regions that comprising polysilicon, that an insulative structure is exposed both between and around such spaced apart regions as they are formed, or fabricating a fuse that comprises a metal silicide with a central region thereof disposed between such spaced apart regions.

For these reasons, the asserted combination of Fischer, Mitani, and Chen cannot support a *prima facie* case of obviousness, pursuant to 35 U.S.C. § 103(a), against independent claim 50. Therefore, under 35 U.S.C. § 103(a), independent claim 50, as well as each of claims 51, 55-60, and 62-68, which depend either directly or indirectly from claim 50, are allowable over Fischer, Mitani, and Chen. Accordingly, the 35 U.S.C. § 103(a) rejection of claims 50, 51, 55-60, and 62-68 should be withdrawn.

Fischer, Mitani, Chen, and Degelormo

Claims 52-54, 69, and 70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fischer, Mitani, and Chen, as applied to claims 50, 51, 55-60, and 62-68, and further in view of U.S. Patent 5,242,859 to Degelormo et al. (hereinafter "Degelormo").

The teachings of Fischer, Mitani, and Chen have been summarized previously herein.

Degelormo merely teaches a chemical vapor deposition method for forming layers of conductively doped polysilicon. Degelormo includes no teaching or suggestion that the CVD process thereof may be used to fabricate any part of a fuse or structures associated directly with a fuse, let alone laterally discrete, spaced apart regions comprising polysilicon over an insulative structure around and between which an underlying insulative structure is exposed.

Thus, Degelormo includes no teaching or suggestion that would remedy the deficiencies of Fischer, Mitani, and Chen with respect to their inabilities to have provided one of ordinary skill in the art with motivation to make the asserted combination.

Nor do the teachings of Degelormo provide one of ordinary skill in the art with any additional reason to believe that the teachings of Fischer, Mitani, Chen, and Degelormo could be successfully combined to provide a method for fabricating a fuse. In particular, Degelormo does not include any teaching or suggestion of "fabricating laterally discrete, spaced apart regions comprising polysilicon on an insulative structure of a semiconductor device, said insulative structure being exposed between and around each of said spaced apart regions", an element of the fuse fabrication process recited in claim 50, from which claims 52-54, 69, and 70 depend, which is also missing from Fischer, Mitani, and Chen.

Furthermore, claims 52-54, 69, and 70 are each allowable, among other reasons, as depending from claim 50, which is allowable.

Therefore, under 35 U.S.C. § 103(a), claims 52-54, 69, and 70 are allowable over the combination of Fischer, Mitani, Chen, and Degelormo. As such, the 35 U.S.C. § 103(a) rejection of claims 52-54, 69, and 70 should be withdrawn.

Fischer, Mitani, Chen, and Sandhu

Claim 61 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fischer, Mitani, and Chen as applied to claims 50 and 60 above, and further in view of Sandhu.

As explained previously herein, Sandhu does not provide any teaching or suggestion that remedies the deficiencies that have been identified herein with respect to the asserted combination of Fischer and Chen. For the same reasons, as well as those discussed previously herein with respect to the asserted combination of Fischer, Mitani, and Chen, Sandhu would not remedy the deficiencies that have been noted regarding the asserted combination of Fischer, Mitani, and Chen. Therefore, a *prima facie* case of obviousness cannot be established against claim 61 based merely upon the asserted combination of teachings from Fischer, Mitani, Chen, and Sandhu.

Claim 61 is allowable, among other reasons, as depending from claim 50 and 60, which are allowable.

Mitani, Fischer, and Chen

Claims 71, 74-86, 88-96, and 101 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitani in view of Fischer and Chen.

The teachings of each of these references have been summarized above.

Independent claim 71 recites a method of fabricating a gate and a fuse that includes patterning regions of a layer of polysilicon to form laterally discrete, spaced apart regions of polysilicon around and between which an underlying field oxide region is exposed.

For the same reasons provided previously herein, one of ordinary skill in the art would not have been motivated to combine the teachings of Mitani, Fischer, and Chen. Moreover, for reasons presented previously herein, one of ordinary skill in the art would have no reason to believe that combining the teachings of these references would result in the method recited in claims 71, 74-86, 88-96, and 101 of the above-referenced application.

The Proposed Combination Does Not Teach or Suggest Each and Every Claim Element

Further, the combined teachings of Mitani, Fischer, and Chen do not teach or suggest each and every element of independent claim 71.

Specifically, none of Mitani, Fischer, or Chen teaches or suggests a fuse fabrication method that includes "patterning at least regions of [a] layer of polysilicon disposed over at least one field oxide region . . . to define at least two laterally discrete, spaced apart regions from said polysilicon over said at least one field oxide region with portions of said at least one field oxide region being exposed laterally around each of said spaced apart regions and therebetween" or "disposing a layer of metal silicide on said layer of polysilicon and into contact with said [exposed] portions of said at least one field oxide region".

Instead, in the fabrication method of Mitani, the polysilicon layer is not patterned until after the metal silicide layer has been formed thereover. Moreover, as the metal silicide layer is formed over the polyslicon layer prior to patterning of either layer, the metal silicide layer does not contact the field oxide region. Moreover, at no point is the field oxide region of Mitani exposed both laterally around and between portions of the polysilicon layer.

Chen neither teaches nor suggests disposing multiple layers to fabricate a fuse, nor patterning such layers.

The teachings of Fischer are limited to forming a window centrally through a conductive layer, which could not result in laterally discrete, spaced apart regions of a first layer of conductive material around and between which an underlying field oxide region is exposed. According to Fischer, no laterally discrete, spaced apart regions of the first layer of conductive material are formed until after the second layer of conductive material has been formed.

As none of Mitani, Chen, or Fischer teaches or suggests patterning at least regions of a layer of polysilicon in the manner recited in independent claim 71, any combination of these references also fails to teach or suggest this element of claim 71.

Claims 74-86, 88-96, and 101 are allowable, among other reasons, as depending either directly or indirectly from independent claim 71, which is allowable.

For these reasons, a *prima facie* case of obviousness cannot be established based on the teachings of Mitani, Chen, and Fischer. Therefore, the 35 U.S.C. § 103(a) rejection of claims 71, 74-86, 88-96, and 101 should be withdrawn.

Mitani, Fischer, Chen, and Degelormo

Claim 72 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitani, Fischer and Chen, as applied to claim 71 above, and further in view of Degelormo.

Claim 72 is allowable, among other reasons, as depending from claim 71, which should be allowed.

Mitani, Fischer, Chen, and Sandhu

Claim 87 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitani, Fischer and Chen as applied to claim 71 above, and further in view of Sandhu.

Claim 87 is allowable, among other reasons, as depending from claim 71, which should be allowed.

Mitani, Fischer, Chen, and Ukeda

Claims 97-100 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitani, Fischer and Chen as applied to claim 71 above, and further in view of U.S. Patent 6,069,055 to Ukeda et al. (hereinafter "Ukeda").

The teachings of each of Mitani, Chen, and Fischer have been summarized previously herein.

Ukeda teaches a dry etch process for anisotropically removing exposed regions of a polysilicon layer through a metal silicide layer. Ukeda does not teach or suggest that the process disclosed therein may be used in fabricating a fuse.

Accordingly, it is clear that Ukeda does not remedy the deficiencies of Mitani, Chen, and Fischer, and the knowledge that was generally available in the art prior to the filing date of the

above-referenced application with respect to providing some motivation to one of ordinary skill in the art to combine the teachings of these references. It is also clear that Ukeda does not include any teaching that would give one of ordinary skill in the art a reasonable basis for expecting the combination of Mitani, Chen, Fischer, and Ukeda to provide a successful method for fabricating a fuse.

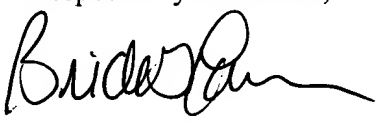
Claims 97-100 are each allowable, among other reasons, as depending from claim 71, which should be allowed.

Accordingly, the 35 U.S.C. § 103(a) rejections of claims 97-100 should be withdrawn.

CONCLUSION

Each of claims 17-33, 50-72, and 74-101 is allowable. An early notice of the allowability of each of these claims and an indication that the above-referenced application has been passed for issuance are solicited. If any issues preventing the allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is invited to contact the undersigned attorney.

Respectfully submitted,



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